UNITED STATES DEPARTMENT OF COMMERCE
National Oceanic and Atmospheric Administration
NATIONAL MARINE FISHERIES SERVICE
NORTHEAST REGION
One Blackburn Drive
Gloucester, MA 01930-2298

SEP - 6 2002

Ms. Magalie Roman Salas, Secretary
Federal Energy Regulatory Commission
888 First Street, N.E., Room 1A
Washington, D.C. 20426

In Reply To:
OEP/DEER/Gas Branch 2
Millenium Pipeline Company, L.P.
Docket Nos. CP98-150-000 et al., and
Columbia Gas Transmission Company,
Docket No. CP98-151-000

ORIGINAL

Dear Secretary Salas:

This letter pertains to the National Marine Fisheries Service's (NMFS) ongoing consultations with the Federal Energy Regulatory Commission (FERC) pursuant to Section 7 of the Endangered Species Act (ESA) of 1973, as amended, and Essential Fish Habitat (EFH) Section 305 (b) provisions of the Magnuson-Stevens Fishery Conservation and Management Act (MSA), on a portion of the proposed Millennium Pipeline Project. Our comments conveyed in this letter reply to FERC's reinitiation of a Section 7 consultation for which you have prepared a supplemental biological assessment, and to EFH consultation for which you have prepared a supplemental EFH assessment. Both assessments address an additional project component of underwater blasting that will occur in a portion of the Haverstraw Bay Hudson River crossing alternative. Included in this correspondence are conservation recommendations to address incremental impacts associated with this newly introduced construction activity in accordance with our authorities mentioned above to protect living marine resources and habitat.

Revised Construction Plan

Project revisions discussed in FERC's supplemental assessments address the effects of underwater blasting within a segment of the pipeline corridor from the eastern shore to a point 185 feet offshore in Haverstraw Bay. Millennium has confirmed that consolidated rock will be encountered along an area 185 feet in length at the eastern most portion of the proposed route and has estimated that 260 cubic yards of rock will be removed to achieve the necessary trench depth. Millennium will initially attempt to remove the rock using an environmental dredge or barge mounted excavator. The FERC assessments indicate that blasting would not be undertaken until efforts to remove rock employing the above mechanical methods fail. Millennium expects that at least some of the consolidated material can be handled by mechanical means. FERC has determined that the operations of blasting and subsequent removal of rock material would not

destroy or affect the benthic community beyond the footprint discussed in the initial assessments, nor would the proposed construction schedule be altered by these activities.

Prior to blasting, soft material (referred to as overburden) would be removed as described above and stored in shallow water barges. Sidecasting would be prohibited. Turbidity impacts would be mediated by the use of the environmental bucket to remove sediment prior to excavation of rock with an open-bucket backhoe. The setback distance for removing rock and overburden would be determined in the field, depending on actual site conditions; however, the construction plan assures that the setback would not exceed the project corridor described in the original biological and EFH assessments for this crossing.

If possible, the blasting is to be accomplished by a single episode, with a maximum of 200 boreholes set 6-11 feet deep and spaced 3-5 feet apart. Charges would be set on delays with 1-2 holes and a maximum charge of 35 pounds per delay. Each bore would be stemmed with 3-7 feet of crushed stone placed in the borehole over the charges. Notwithstanding, the Vibra-Tech attachment indicates that more than one blasting episode may be necessary due to barge access limitations. To enhance the mitigation of blasting impacts, attempts to detect fish schools would be made prior to detonation, and noise-generating devices would be used to discourage fish from approaching the blast area. An air bubble curtain would be installed within the 96 hour 1% mortality distance based on the Coastline Environmental Service's I-Blast model (assuming a 35 pound high explosive charge and fish weighing between 0.25 and 15 pounds).

The pipe would be installed and the excavated trench will be backfilled to original elevations with the stockpiled rock and sediment consistent with activities proposed for the remainder of the Hudson River crossing. It would not be possible to restore the benthic habitat fully in the blasted area since the fractured bedrock could not be returned to its pre-construction condition.

NMFS Endangered Species Act Comments

On January 17, 2001, FERC submitted a biological assessment (BA) and requested initiation of formal consultation pursuant to section 7 of the ESA on the portion of the Millennium Pipeline Project proposed to traverse Haverstraw Bay in the Hudson River, New York. On April 4, 2001, NMFS requested additional information to supplement the BA. The information requested by NMFS was discussed in greater detail in a conference call on May 18, 2001. FERC submitted additional information to NMFS in a letter dated June 1, 2001. On June 7, 2001, the applicant, Millennium Pipeline Company (Millennium), visited NMFS' Northeast Regional Office and presented information on their project application. While this meeting did provide additional clarification and details on the project components, no new information was provided and NMFS concluded that June 1, 2001, was the date of initiation of formal consultation.

On June 15, 2001, NMFS informed FERC that all of the information necessary for a formal section 7 consultation and biological opinion (BO) had been received and reminded FERC not to make any irreversible or irretrievable commitment of resources that would prevent NMFS or FERC from implementing any reasonable and prudent alternatives to avoid jeopardizing shortnose sturgeon.

On September 14, 2001, NMFS issued a BO on the impacts of FERC's issuance of a permit for the proposed dredging and pipelaying portion of the Millennium Pipeline Project on endangered shortnose sturgeon. Following the conclusion of the formal consultation, NMFS was informed in a letter dated January 23, 2002, from Sidley Austin Brown and Wood that blasting may be required to complete the pipeline installation. Information indicating that blasting may be necessary during pipeline construction was not included in the initiation package (i.e., the biological assessment or Supplemental Draft Environmental Impact Statement). Therefore, an analysis on the effects of blasting on endangered shortnose sturgeon was not included in NMFS' BO. Pursuant to section 7 of the ESA, reinitiation of consultation is required if project plans are modified in a way that causes an effect to the listed species not previously considered in preparation of the BO.

In a letter dated July 3, 2002, FERC requested reinitiation of formal consultation on the blasting portion of the Millennium Pipeline Project. In this letter, FERC enclosed a supplemental BA and two blasting mitigation plans prepared by Vibra-Tech Engineers, Inc. and Lawler, Matusky, and Skelly Engineers LLP. NMFS has reviewed the supplemental BA and blasting mitigation plans and offers the following comments on the effects of blasting on endangered shortnose sturgeon.

Endangered shortnose sturgeon occur in the Hudson River from approximately New York City to the Troy Dam. Both adults and juveniles have been found to use Haverstraw Bay for summer foraging and/or overwintering. From late fall to early spring adult shortnose sturgeon overwinter in dense aggregations. Reproductive activity the following spring determines overwintering behavior; non-spawning adults aggregate in and/or near Haverstraw Bay, while spawning adults concentrate near Kingston. Most juveniles occupy the broad region of Haverstraw Bay by late fall and early winter (Buckley and Kynard 1985, Dovel et al. 1992, Bain et al. 1998). Therefore, both adult and juvenile shortnose sturgeon have the potential to be in the area during blasting and may be adversely affected.

A number of studies have examined the effect of underwater blasting on fish and have concluded that blasting does have an adverse impact. Results from previous blasting studies conducted on 13 species of fish revealed that swimbladder rupture and hemorrhaging in the pericardial and coelomic cavities were common injuries (Wiley et al., 1981). While shortnose sturgeon were not the focus of these studies, the results can be used to predict the impact of blasting on shortnose sturgeon given there are certain factors that influence both the magnitude of the blast and the explosion pressure wave. Teleki and Chamberlain found that the magnitude of the blasting effect on fish is dependent upon several physical and biological characteristics. Physical components include detonation velocity, density of material to be blasted, and charge weight. Fish shape, swimbladder development, and location of the fish in the water column represent influential biological characteristics. The explosion pressure wave and resultant fish kill is influenced by the interaction of additional physical components including the composition of the explosive, water depth, and bottom composition (Teleki and Chamberlain, 1978).

In order to assess the impacts of blasting on shortnose sturgeon, in December of 1998 and January of 1999 test blasting was conducted in Wilmington Harbor. The results of this study demonstrated that while shortnose sturgeon do suffer from swimbladder ruptures, more common

consultation is required. However, if any of these measures are not employed, then it is our determination that this portion of the proposed project may affect the endangered shortnose sturgeon, and reinitiation of formal consultation under the ESA will be required.

The above determination has been made using the best available scientific and commercial information. As provided in 50 CFR §402.16, reinitiation of formal consultation is required where discretionary federal agency involvement or control over the action has been retained (or is authorized by law) and if: (1) the amount or extent of taking specified in the incidental take statement is exceeded; (2) new information reveals effects of the action that may affect listed species or critical habitat in a manner or to an extent not previously considered; (3) the identified action is subsequently modified in a manner that causes an effect to listed species or critical habitat that was not considered in this biological opinion; or (4) a new species is listed or critical habitat designated that may be affected by the identified action. In instances where the amount or extent of incidental take is exceeded, section 7 consultation must be reinitiated immediately.

NMFS Magnuson-Stevens Act, Essential Fish Habitat Comments

In January, 2001, FERC submitted an EFH assessment and request for consultation pursuant to the MSA. The assessment would be for construction activities proposed in Haverstraw Bay in the Hudson River, New York. On March 22, 2001, NMFS responded to FERC's EFH assessment with 1) a summary of concerns related to the ecological effects that would be incurred by constructing the proposed river crossing, and 2) EFH conservation recommendations pursuant to Section 305(b)(4)(A) of the MSA. Subsequently, NMFS was informed that blasting may be required in a portion of Haverstraw Bay to complete project installation. Information describing the proposed blasting and its impacts on the Haverstraw Bay habitat was not included in the initial EFH assessment or supplemental draft environmental impact statement. NMFS received FERC's supplemental EFH assessment on July 8, 2002. This assessment included attachments produced by Vibra-Tech Engineers, Inc. and Lawler, Matusky, and Skelly Engineers.

This supplemental EFH assessment was prepared by FERC to evaluate the impacts that would result from underwater blasting in a portion of the Haverstraw Bay alignment alternative, which was not considered in the original EFH assessment. Supplemental consultation is necessary since the original EFH assessment was submitted because the applicant has determined that mechanical means alone would not likely succeed in establishing the trench necessary for the pipe to complete a portion of the proposed river crossing. NMFS has reviewed the supplemental EFH assessment and offers the following comments and conservation recommendations pursuant to Section 305(b)(4)(A) of the MSA and Part IV, Paragraph 3(b) of the Clean Water Act MOA between NMFS and the Army Corps of Engineers (ACOE).

The supplemental EFH assessment and attachments indicate that the underwater blasting would be confined to the easternmost 185 feet of the proposed Haverstraw Bay crossing. The assessment includes a general blasting plan and proposed mitigative measures as referred to in the Revised Blasting Plan section of this letter. We offer the following comments and recommendations on the supplemental EFH assessment pursuant to the MSA. These comments and recommendations address incremental impacts associated with the addition of a blasting

component for construction of the project through the Haverstraw Bay alignment alternative. The conservation recommendations issued for this action complement those already on record for the ongoing EFH consultation as stated in our letter to FERC on March 22, 2001, and under consideration by FERC .

Project details discussed in FERC's supplemental EFH assessment address the effects of underwater blasting within a segment of the pipeline corridor from the eastern shore to a point 185 feet offshore in Haverstraw Bay. The assessment includes discussion of EFH impacts from the blasting and subsequent removal of rock material; effects on the original project footprint established in the initial assessment and on the original proposed construction schedule; management of rock and sediment spoils; and blasting procedures and protocols. Mitigation methods are also discussed (see Revised Project Description). We understand from this discussion that overlying soft material on the bay bottom would be removed as described in the initial EFH assessment and stored in shallow draft barges, and sidecasting would be prohibited. Further, setback distance for removing the rock and soft sediment, although determined in the field, would be within the limits of the setback project corridor described in the original EFH assessment for this crossing. Moreover, blasting would occur only when mechanical methods fail, and the project schedule would not be affected.

We note that Millennium proposes to accomplish the blasting in a single episode, but the Vibra-Tech attachment indicates that more than one episode may be necessary due to barge access limitations. The EFH assessment acknowledges that the cumulative effects of multiple blasts would exceed the effect of the planned, single blasting episode. Further, it would not be possible to restore the benthic habitat fully since the fractured bedrock could not be returned to its pre-construction condition. The supplemental EFH assessment acknowledges that some unavoidable changes would accrue to EFH where bedrock areas would be permanently disturbed.

Regarding the application of the mitigative measures using noise-generating fish deterrent and an air bubble curtain, we have concern about the I-Blast model inputs. The air bubble curtain would be installed within the 96 hour 1% mortality distance based on the Coastline Environmental Service's I-Blast model (assuming a 35 pound high explosive charge and fish weighing between 0.25 and 15 pounds). We agree that the acoustic deterrents may discourage these fish from nearing the immediate blasting zone and that a properly designed bubble curtain would attenuate wave pressures created by the subaqueous blasting. However, we believe that assumptions used in the I-blast model do not account for potential impacts on outmigrating alosids, which will be smaller than 0.25 pounds, and that the present air curtain design will not provide protection for these fish. In this regard, the I-Blast model should be rerun to ensure that it will account for protection of alosids smaller than 0.25 pounds.

As indicated in the initial EFH assessment for this project, EFH is present in Haverstraw Bay for six species regulated under the MSA for the blasting component under review: red hake (*Urophysis chuss*), winter flounder (*Pseudopleuronectes americanus*), windowpane (*Scopthalmus aquosus*), bluefish (*Pomatomus saltatrix*), Atlantic butterfish (*Peprilus triacanthus*), and fluke (*Paralichthys dentatus*). The revised pipeline installation requiring blasting for the easternmost 185 feet of the Haverstraw Bay crossing would adversely affect EFH

primarily by disturbing natural sediment structure, by resuspending contaminants, by dispersing or destroying forage species, by altering shallow subtidal habitats, by changing the natural shoreline development, and by fracturing the bedrock formation at the east shore of Haverstraw Bay. NMFS recommends pursuant to Section 305(b)(4)(A) of the MSA and Part IV, Paragraph 3(b) of the Clean Water Act MOA between NMFS and the ACOE the following conservation recommendations:

- The I-Blast model should be repeated to determine if the bubble curtain perimeter needs revision in order to provide the additional 1% mortality protection for all size classes of outmigrating alosids, an important forage species for many species for which EFH has been designated in the Hudson River estuary and beyond.
- In the event that a school of fish is present in the blasting zone and remains undeterred by noise-generating devices, blasting must be delayed until the fish move outside of the calculated impact area. The decision to proceed must be approved immediately in advance by the independent environmental monitor or designated personnel from the involved state or federal regulatory agencies.
- Provide NMFS with an actual blasting plan as soon as it is developed by the contractor for final agency review. This plan should be designed to achieve the necessary fracturing in one episode and in a manner to minimize the resulting physical and biological impacts. We also request that our staff be given a minimum of 48 hours notice prior to any detonation taking place so agency observers may be deployed if it is determined necessary or desirable upon review of the final plan.
- All fish kills and habitat damage that exceed the very limited area of impact characterized in the supplemental EFH assessment must be compensated based on suitable replacement values or formulas.

Section 305(b)(4)(B) of the MSA requires the involved federal authorizing and funding agencies to provide NMFS with a detailed written response to these EFH conservation recommendations, including a description of measures adopted by FERC and ACOE for avoiding, mitigating, or offsetting the impact of the project on EFH. In the case of a response that is inconsistent with NMFS' recommendations, FERC and/or the ACOE must explain its reasons for not following the recommendations, including the scientific justification for any disagreements with NMFS over the anticipated effects of the proposed action and the measures needed to avoid, minimize, mitigate, or offset such effects pursuant to 50 CFR 600.920(k).

If new information becomes available or the project is revised in such a manner that affects the basis for the above EFH conservation recommendations, the EFH consultation must be reinitiated pursuant to 50 CFR 600.920(l).

Conclusions

We offer the above recommendations in response to a change in scope for this project. We recommend that FERC and the ACOE (as appropriate) require that the project proponents revise their proposed blasting plan to avoid and minimize negative impacts on living marine resources and habitats in accordance with Section 7 and EFH conservation recommendations. We continue

to maintain our recommendations issued on the overall project proposal as presented in previous correspondence to the FERC Secretary and to the ACOE and look forward to your response to EFH conservation recommendations issued on March 22, 2001, and existing ESA matters.

If you have questions concerning these comments or consultation requirements, please contact Jessica Anthony at 978-281-9254 for ESA matters, and Diane Rusanowsky at 203-882-6504 for EFH matters. I look forward to continued cooperation with FERC through in this consultation process.

Sincerely,

Patricia A. Kurkul
Regional Administrator

cc: USACE - Buffalo, New York, Albany Field Office
USFWS - Cortland
NYSDEC - Albany
NYSDOS - Cortland
NMFS - Anthony, Mantzaris, K. Conant, Colligan, Colosi, Gorski, Rusanowsky, Hogarth, Kurkul
GCNE - Williams
ACOE - Heidi Firstencel
FERC - Jeff Shenot/Gas Branch 2, PJ-11.2

File Code: 1514-05 (A) FERC - Millennium Pipeline Project (blasting)

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Dovel, W.L., A.W. Pekovitch, and T.J. Berggren. 1992. Biology of the shortnose sturgeon (*Acipenser brevirostrum* Leseur, 1818) in the Hudson River estuary, New York. Pages 187-216 in C.L. Smith (editor), Estuarine research in the 1980s. State Univ. New York Press, Albany, New York.

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